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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS–R4–ES–2014–0046]

[4500030113]

RIN 1018–BA03

Endangered and Threatened Wildlife and Plants; Threatened Species Status for Black Pinesnake

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), propose to list the black pinesnake (*Pituophis melanoleucus lodingi*), a subspecies currently known from Alabama and Mississippi, as a threatened species under the Endangered Species Act (Act). If we

finalize this rule as proposed, it would extend the Act's protections to this subspecies and add it to the List of Endangered and Threatened Wildlife.

DATES: We will accept comments received or postmarked on or before **[INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

Comments submitted electronically using the Federal eRulemaking Portal (see **ADDRESSES**, below) must be received by 11:59 p.m. Eastern Time on the closing date.

We must receive requests for public hearings, in writing, at the address shown in **FOR FURTHER INFORMATION CONTACT** by **[INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: You may submit comments by one of the following methods:

(1) *Electronically:* Go to the Federal eRulemaking Portal:

<http://www.regulations.gov>. In the Search box, enter FWS-R4-ES-2014-0046, which is the docket number for this rulemaking. Then, in the Search panel on the left side of the screen, under the Document Type heading, click on the Proposed Rules link to locate this document. You may submit a comment by clicking on "Comment Now!"

(2) *By hard copy:* Submit by U.S. mail or hand-delivery to: Public Comments Processing, Attn: FWS-R4-ES-2014-0046; Division of Policy and Directives Management; U.S. Fish and Wildlife Service; MS: BPHC; 5275 Leesburg Pike; Falls Church, VA 22041-3803.

We request that you send comments only by the methods described above. We will post all comments on <http://www.regulations.gov>. This generally means that we will post any personal information you provide us (see *Public Comments*, below, for more information).

FOR FURTHER INFORMATION CONTACT: Stephen Ricks, Field Supervisor, U.S. Fish and Wildlife Service, Mississippi Ecological Services Field Office, 6578 Dogwood View Parkway, Jackson, MS 39214; telephone 601-321-1122; or facsimile 601-965-4340. Persons who use a telecommunications device for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 800-877-8339.

SUPPLEMENTARY INFORMATION

Executive Summary

Why we need to publish a rule. Under the Act, if we find that listing a species is endangered or threatened throughout all or a significant portion of its range is warranted, we are required to promptly publish a proposal in the **Federal Register** and make a determination on our proposal within one year. Listing a species as an endangered or threatened species can only be completed by issuing a rule. Critical habitat is prudent, but not determinable at this time.

This rule proposes to list the black pinesnake (*Pituophis melanoleucus lodingi*) as a

threatened species. In addition, we are proposing a rule under section 4(d) of the Act that outlines the prohibitions and conservation actions necessary and advisable for the conservation of the black pinesnake as a threatened species.

The basis for our action. Under the Act, we may determine that a species is an endangered or threatened species based on any of five factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence. We have found that the black pinesnake warrants listing as a threatened species due to the past and continuing loss, degradation, and fragmentation of habitat in association with silviculture, urbanization, and fire suppression. Population declines are also attributed to road mortality and intentional killing of snakes by individuals. These threats, coupled with an apparent low reproductive rate, threaten this subspecies' long-term viability.

We will seek peer review. We will seek comments from independent specialists to ensure that our designation is based on scientifically sound data, assumptions, and analyses. We will invite these peer reviewers to comment on our listing proposal. Because we will consider all comments and information we receive during the comment period, our final determination may differ from this proposal.

Information Requested

Public Comments

We intend that any final action resulting from this proposed rule will be based on the best scientific and commercial data available and be as accurate and as effective as possible. Therefore, we request comments or information from other concerned governmental agencies, Native American tribes, the scientific community, industry, or any other interested parties concerning this proposed rule. We particularly seek comments concerning:

(1) Additional information concerning the historical and current status, range, distribution, and population size of the black pinesnake, including the locations of any additional populations of this subspecies.

(2) The black pinesnake's biology, range, and population trends, including:

(a) Biological or ecological requirements of the subspecies, including habitat requirements for feeding, breeding, and sheltering;

(b) Genetics and taxonomy, including interpretations of existing studies or whether new information is available;

(c) Historical and current range, including distribution patterns;

(d) Historical and current population levels, and current and projected trends; and

(e) Past and ongoing conservation measures for the subspecies, its habitat, or both.

(3) Factors that that may affect the continued existence of the subspecies, which may include habitat modification or destruction, overutilization, collection for the pet trade, disease, predation, the inadequacy of existing regulatory mechanisms, or other natural or manmade factors.

(4) Biological, commercial trade, or other relevant data concerning any threats (or lack thereof) to this subspecies and existing regulations that may be addressing those threats.

(5) Any information concerning the appropriateness and scope of the proposed section 4(d) rule provisions for take of the black pinesnake. We are particularly interested in input regarding timber and forest management and restoration practices that would be appropriately addressed through a section 4(d) rule, including those that adjust the timing or methods to minimize impacts to the species or its habitat.

(6) Any additional information on current conservation activities or partnerships benefitting the subspecies, or opportunities for additional partnerships or conservation activities that could be undertaken in order to address threats.

(7) Any information on specific pesticides that could impact the black pinesnake or its prey base either directly or indirectly, which could cause further mortality or decline of the species.

Please include sufficient information with your submission (such as scientific journal articles or other publications) to allow us to verify any scientific or commercial information you include.

Please note that submissions merely stating support for or opposition to the action under consideration without providing supporting information, although noted, will not be considered in making a determination, as section 4(b)(1)(A) of the Act (16 U.S.C. 1531 et seq.) directs that determinations as to whether any species is an endangered or threatened species must be made “solely on the basis of the best scientific and commercial data available.”

You may submit your comments and materials concerning this proposed rule by one of the methods listed in the **ADDRESSES** section. We request that you send comments only by the methods described in the **ADDRESSES** section.

If you submit information via <http://www.regulations.gov>, your entire submission—including any personal identifying information—will be posted on the website. If your submission is made via a hardcopy that includes personal identifying information, you may request at the top of your document that we withhold this

information from public review. However, we cannot guarantee that we will be able to do so. We will post all hardcopy submissions on <http://www.regulations.gov>. Please include sufficient information with your comments to allow us to verify any scientific or commercial information you include.

Comments and materials we receive, as well as supporting documentation we used in preparing this proposed rule, will be available for public inspection on <http://www.regulations.gov>, or by appointment, during normal business hours, at the U.S. Fish and Wildlife Service, Mississippi Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Public Hearing

Section 4(b)(5) of the Act provides for one or more public hearings on this proposal, if requested. Requests must be received within 45 days after the date of publication of this proposed rule in the **Federal Register**. Such requests must be sent to the address shown in the **FOR FURTHER INFORMATION CONTACT** section. We will schedule public hearings on this proposal, if any are requested, and announce the dates, times, and places of those hearings, as well as how to obtain reasonable accommodations, in the **Federal Register** and local newspapers at least 15 days before the hearing.

Peer Review

In accordance with our joint policy on peer review published in the **Federal Register** on July 1, 1994 (59 FR 34270), we are seeking the expert opinions of seven appropriate and independent specialists regarding this proposed rule. The purpose of peer review is to ensure that our listing determination is based on scientifically sound data, assumptions, and analyses. The peer reviewers have expertise in the black pinesnake's biology, habitat, or physical or biological factors, and they are currently reviewing the status information in the proposed rule, which will inform our determination. We invite comment from the peer reviewers during this public comment period.

Previous Federal Actions

We identified the black pinesnake as a Category 2 candidate species in the December 30, 1982, Review of Vertebrate Wildlife for Listing as Endangered or Threatened Species (47 FR 58454). Category 2 candidates were defined as taxa for which we had information that proposed listing was possibly appropriate, but for which conclusive data on biological vulnerability and threats were not available to support a proposed rule at the time. The subspecies remained so designated in subsequent annual Candidate Notices of Review (CNORs) (50 FR 37958, September 18, 1985; 54 FR 554, January 6, 1989; 56 FR 58804, November 21, 1991; and 59 FR 58982, November 15, 1994). In the February 28, 1996, CNOR (61 FR 7596), we discontinued the designation of Category 2 species as candidates; therefore, the black pinesnake was no longer a candidate species.

On October 25, 1999, the black pinesnake was added to the candidate list (64 FR 57534). Candidates are those fish, wildlife, and plants for which we have on file sufficient information on biological vulnerability and threats to support preparation of a listing proposal, but for which development of a listing regulation is precluded by other higher priority listing activities. The black pinesnake was included in all of our subsequent annual CNORs (66 FR 54808, October 30, 2001; 67 FR 40657, June 13, 2002; 69 FR 24876, May 4, 2004; 70 FR 24870, May 11, 2005; 71 FR 53756, September 12, 2006; 72 FR 69034, December 6, 2007; 73 FR 75176, December 10, 2008; 74 FR 57804, November 9, 2009; 75 FR 69222, November 10, 2010; 76 FR 66370, October 26, 2011; 77 FR 69994, November 21, 2012; 78 FR 70104, November 22, 2013). The black pinesnake has a listing priority number of 3, which reflects a subspecies with threats that are both imminent and high in magnitude.

On May 11, 2004, we were sent a petition to list the black pinesnake. No new information was provided in the petition, and we had already found the subspecies warranted listing, so no further action was taken on the petition.

On May 10, 2011, the Service announced a work plan to restore biological priorities and certainty to the Service's listing process. As part of an agreement with Center for Biological Diversity and WildEarth Guardians, the Service filed the work plan with the U.S. District Court for the District of Columbia. The work plan will enable the agency to, over a period of 6 years, systematically review and address the needs of more

than 250 species listed within the 2010 CNOR, including the black pinesnake, to determine if these species should be added to the Federal Lists of Endangered and Threatened Wildlife and Plants. This work plan will enable the Service to again prioritize its workload based on the needs of candidate species, while also providing State wildlife agencies, stakeholders, and other partners with clarity and certainty about when listing determinations will be made. On July 12, 2011, the Service reached an agreement with Center for Biological Diversity and WildEarth Guardians and further strengthened the work plan, which will allow the agency to focus its resources on the species most in need of protection under the Act. These agreements were approved on September 9, 2011. The timing of this proposed listing is, in part, therefore, an outcome of the work plan.

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Background

Species Information

Species Description and Taxonomy

Pinesnakes (genus *Pituophis*) are large, non-venomous, oviparous (egg-laying) constricting snakes with keeled scales and disproportionately small heads (Conant and Collins 1991, pp. 201-202). Their snouts are pointed. Black pinesnakes are distinguished from other pinesnakes by being dark brown to black both on the upper and

lower surfaces of their bodies. There is considerable individual variation in adult coloration (Vandevert and Young 1989, p. 34), and some adults have russet-brown snouts. They may also have white scales on their throat and ventral surface (Conant and Collins 1991, p. 203). In addition, there may also be a vague pattern of blotches on the end of the body approaching the tail. Adult black pinesnakes range from 48 to 76 inches (122 to 193 centimeters) long (Conant and Collins 1991, p. 203; Mount 1975, p. 226). Young black pinesnakes often have a blotched pattern, typical of other pinesnakes, which darkens with age. The subspecies' defensive posture when disturbed is particularly interesting; when threatened, it throws itself into a coil, vibrates its tail rapidly, strikes repeatedly, and utters a series of loud hisses (Ernest and Barbour 1989, p. 102).

Pinesnakes (*Pituophis melanoleucus*) are members of the Class Reptilia, Order Squamata, Suborder Serpentes, and Family Colubridae. There are three recognized subspecies of *P. melanoleucus* distributed across the eastern United States (Crother 2012, p. 66; Rodriguez-Robles and De Jesus-Escobar 2000, p. 35): the northern pinesnake (*P. m. melanoleucus*); black pinesnake (*P. m. lodingi*); and Florida pinesnake (*P. m. mugitus*). The black pinesnake was originally described by Blanchard (1924, pp. 531-532), and is geographically isolated from all other pinesnakes. However, there is evidence that the black pinesnake was in contact with other pinesnakes in the past. A form intermediate between *P. m. lodingi* and *P. m. mugitus* occurs in Baldwin and Escambia Counties, Alabama, and Escambia County, Florida, and may display morphological characteristics of both subspecies (Conant 1956, pp. 10-11). These snakes are separated from populations of the black pinesnake by the extensive Texas-Mobile

River Delta and the Alabama River, and it is unlikely that there is currently gene flow between pinesnakes across the delta (Duran 1998a, p. 13; Hart 2002, p. 23). A study on the genetic structure of the three subspecies of *P. melanoleucus* (Getz *et al.* 2012, p. 2) showed evidence of mixed ancestry, and supported the current subspecies designations and the determination that all three are genetically distinct groups. Evidence suggests a possible historical intergradation between *P. m. lodingi* and *P. ruthveni* (Louisiana pinesnake), but their current ranges are no longer in contact and intergradation does not presently occur (Crain and Cliburn 1971, p. 496).

Habitat

Black pinesnakes are endemic to the upland longleaf pine forests that once covered the southeastern United States. Habitat for these snakes consists of sandy, well-drained soils with an open-canopied overstory of longleaf pine, a reduced shrub layer, and a dense herbaceous ground cover (Duran 1998a, p. 2). Duran (1998b, pp. 1-32) conducted a radio-telemetry study of the black pinesnake that provided data on habitat use. Snakes in this study were usually located on well-drained, sandy-loam soils on hilltops, on ridges, and toward the tops of slopes in areas dominated by longleaf pine. They were rarely found in riparian areas, hardwood forests, or closed canopy conditions. From radio-telemetry studies, it has been shown that black pinesnakes spend a majority of their time below ground: (1) 65.5 percent of locations (Duran 1998a, p. 12); (2) 53-62 percent of locations (Yager *et al.* 2005, p. 27); and (3) 70.4 percent of locations (Baxley

and Qualls 2009, p. 288). These locations were usually in the trunks or root channels of rotting pine stumps.

During two additional radio-telemetry studies, individual pinesnakes were observed using riparian areas, hardwood forests, and pine plantations periodically, but the majority of their time was still spent in intact upland longleaf pine habitat. While they will use multiple habitat types periodically, they repeatedly returned to core areas in the longleaf pine uplands and used the same pine stump and associated rotted-out root system from year to year, indicating considerable site fidelity (Yager, *et al.* 2006, pp. 34-36; Baxley 2007, p. 40). Several radio-tracked juvenile snakes were observed using mole or other small mammal burrows rather than the bigger stump holes used by adult snakes (Lyman *et al.* 2007, pp. 39-41).

Pinesnakes may show some seasonal movement trends of emerging from overwintering sites in February, moving to an active area from March until September, and then moving back to their overwintering areas (Yager, *et al.* 2006, pp. 34-36). The various areas utilized throughout the year may not have significantly different habitat characteristics, but these movement patterns support the need for black pinesnakes to have access to larger, unfragmented tracts of habitat to accommodate fairly large home ranges while minimizing interactions with humans.

The minimum amount of habitat necessary to support a viable black pinesnake population (reserve size) has not previously been determined, and estimating that value

can be quite challenging, primarily based on the elusive nature of the subspecies (Wilson *et al.* 2011, pp. 42-43); however, it is clear that the area would need to constitute an unconstrained activity area, sufficiently large enough to accommodate the long-distance movements that have been reported for the subspecies (Baxley and Qualls 2009, pp. 287-288). Fragmentation by roads, urbanization, or incompatible habitat conversion continues to be a major threat affecting the subspecies (see discussion under *Factor E: Other Natural or Manmade Factors Affecting Its Continued Existence*).

Life History

Black pinesnakes are active during the day but only rarely at night. As evidenced by their pointed snout and enlarged rostral scale (the scale at the tip of their snout), they are accomplished burrowers capable of tunneling in loose soil, potentially for digging nests or excavating rodents for food (Ernst and Barbour 1989, pp. 100-101). In addition to rodents, wild black pinesnakes have been reported to eat nestling rabbits and quail (Vandeventer and Young 1989, p. 34). During field studies of black pinesnakes in Mississippi, hispid cotton rats (*Sigmodon hispidus*) and cotton mice (*Peromyscus gossypinus*) were the most frequently trapped small mammals within black pinesnake home ranges (Duran and Givens 2001, p. 4; Baxley 2007, p. 29). These results suggest that these two species of mammals represent essential components of the snake's diet (Duran and Givens 2001, p. 4).

Duran and Givens (2001, p. 4) estimated the average size of individual black pinesnake home ranges (Minimum Convex Polygons (MCPs)) on Camp Shelby, Mississippi, to be 117.4 acres (ac) (47.5 hectares (ha)) using data obtained during their radio-telemetry study. Observations made during this study also provided some evidence of territoriality in the black pinesnake. A more recent study conducted on Camp Shelby provided home range estimates from 135 to 385 ac (55 to 156 ha) (Lee 2014a, p. 1). Additional studies from the De Soto National Forest (NF) and other areas of Mississippi have documented somewhat higher MCP home range estimates, from 225 to 979 ac (91 to 396 ha) (Baxley and Qualls 2009, p. 287). The smaller home range sizes from Camp Shelby may be a reflection of the higher habitat quality at the site, as the snakes may not need to travel great distances to meet their ecological needs. A modeling study of movement patterns in bullsnakes revealed that home range sizes increased as a function of the amount of avoided habitat, such as agricultural fields (Kapfer *et al.* 2010, p. 15). As snakes are forced to increase the search radius to locate preferred habitat, their home range invariably increases. The dynamic nature of individual movement patterns supports the need for black pinesnake habitat to be maintained in large, unfragmented parcels to sustain survival of a population. In the late 1980s, a gopher tortoise preserve of approximately 2,000 ac (809 ha) was created on Camp Shelby, a National Guard training facility operating under a special use permit on the De Soto NF in Forrest, George, and Perry Counties, Mississippi. This preserve, which has limited habitat fragmentation and has been specifically managed with prescribed burning and habitat restoration to support the recovery of the gopher tortoise, is believed to be central to a much larger managed

area (over 100,000 acres) which provides habitat for one of the largest populations of black pinesnakes in the subspecies' range (Lee 2014a, p. 1).

Very little information on the black pinesnake's breeding and egg-laying is available from the wild. Lyman *et al.* (2007, p. 39) described the time frame of mid-May through mid-June as the period when black pinesnakes breed on Camp Shelby, and mating activities may take place in or at the entrance to armadillo burrows. However, Lee (2007, p. 93) described copulatory behavior in a pair of black pinesnakes in late September. Based on dates when hatchling black pinesnakes have been captured, the potential nesting and egg deposition period of gravid females extends from the last week in June to the last week of August (Lyman *et al.* 2009, p. 42). In 2009, a natural nest with a clutch of six recently hatched black pinesnake eggs was found at Camp Shelby (Lee *et al.* 2011, p. 301) at the end of a juvenile gopher tortoise burrow. As there is only one documented natural black pinesnake nest, it is unknown whether the subspecies exhibits nest site fidelity; however, nest site fidelity has been described for other *Pituophis* species. Burger and Zappalorti (1992, pp. 333-335) conducted an 11-year study of nest site fidelity of northern pinesnakes in New Jersey and documented the exact same nest site being used for 11 years in a row, evidence of old egg shells in 73 percent of new nests, and recapture of 42 percent of female snakes at prior nesting sites. The authors suggest that females returning to a familiar site should have greater knowledge of available resources, basking sites, refugia, and predator pressures; therefore they would have the potential for higher reproductive success compared with having to find a new nest site (Burger and Zappalorti 1992, pp. 334-335). If black pinesnakes show similar

site fidelity, it follows that they too might have higher reproductive success if their nesting sites were to remain undisturbed.

Specific information about underground refugia of the black pinesnake was documented during a study conducted by Rudolph *et al.* (2007, p. 560), which involved excavating five sites used by the subspecies for significant periods of time from early December through late March. The pinesnakes occurred singly at shallow depths (mean of 9.8 in (25 cm); maximum of 13.8 in (35 cm)) in chambers formed by the decay and burning of pine stumps and roots (Rudolph *et al.* 2007, p. 560). The refugia were not excavated by the snakes beyond minimal enlargement of the preexisting chambers. These sites are not considered true hibernacula because black pinesnakes move above ground on warm days throughout all months of the year (Rudolph *et al.* 2007, p. 561; Baxley 2007, pp. 39-40).

Longevity of wild black pinesnakes is not well documented, but is at least 11 years, based on recapture data from Camp Shelby (Lee, pers. comm., 2014b). The longevity record for a captive male black pinesnake is 14 years, 2 months (Slavens and Slavens 1999, p. 1). Recapture and growth data from black pinesnakes on Camp Shelby indicate that they may not reach sexual maturity until their 4th or possibly 5th year (Yager *et al.* 2006, p. 34).

Predators of black pinesnakes include red-tailed hawks (*Buteo jamaicensis*), raccoons (*Procyon lotor*), skunks (*Mephitis mephitis*), red foxes (*Vulpes vulpes*), feral

cats (*Felis catus*), and domestic dogs (*Canis familiaris*) (Ernst and Ernst 2003, p. 284; Yager *et al.* 2006, p. 34; Lyman *et al.* 2007, p. 39) as well as humans.

Historical/Current Distribution

There are historical records for the black pinesnake from one parish in Louisiana (Washington Parish), 14 counties in Mississippi (Forrest, George, Greene, Harrison, Jackson, Jones, Lamar, Lauderdale, Marion, Pearl River, Perry, Stone, Walthall, and Wayne Counties), and 3 counties in Alabama west of the Mobile River Delta (Clarke, Mobile, and Washington Counties). Historically, populations likely occurred in all of these contiguous counties. Currently, some populations cross county boundaries, but the species is no longer found in all of these counties. A recent record has been identified in Lawrence County, Mississippi (Lee 2014b, p. 1), where black pinesnakes have not previously been documented. However, this is a single capture and it is unknown if it is part of a larger population.

Duran (1998a, p. 9) and Duran and Givens (2001, p. 24) concluded that black pinesnakes have been extirpated from Louisiana and from two counties (Lauderdale, and Walthall) in Mississippi. In these two studies, all historical and current records were collected, land managers from private, State, and Federal agencies with local knowledge of the subspecies were interviewed, and habitat of all historical records was visited and assessed. As black pinesnakes have not been reported west of the Pearl River in either Mississippi or Louisiana in over 30 years, and since there are no recent (post-1979)

records from Pearl River County (Mississippi), we believe them to be extirpated from that county as well. To our knowledge there are no recent site-specific surveys from areas west of the Pearl River, and the last record from Louisiana was from 1965.

In general, pinesnakes are particularly difficult to survey for given their tendency to remain below-ground most of the time. Most records are the result of incidental observations from road crossings, road killed snakes, and other activities that take observers into black pinesnake habitat such as forestry, unrelated biological surveys, or recreation.

A review of records, interviews, and status reports indicated that black pinesnakes remain in all historical counties in Alabama (Clarke, Mobile, and Washington) and in 11 out of 14 historical counties in Mississippi (Forrest, George, Greene, Harrison, Jackson, Jones, Lamar, Marion, Perry, Stone, and Wayne). Black pinesnake populations in many of the occupied counties in Mississippi occur on the De Soto NF. Much of the habitat outside of the National Forest has become highly fragmented, and populations on these lands appear to be small and isolated on islands of suitable longleaf pine habitat (Duran 1998a, p. 17; Barbour 2009, pp. 6-13).

Population Estimates and Status

Duran and Givens (2001, pp. 1-35) reported the results of a habitat assessment of all black pinesnake records (156) known at the time of their study. Habitat suitability of

the sites was based on how the habitat compared to that selected by black pinesnakes in a previously completed telemetry study of a population occupying what was considered high-quality habitat (Duran 1998b, pp. 1-44). Black pinesnake records were joined using a contiguous suitable habitat model (combining areas of suitable habitat with relatively unrestricted gene flow) to create “population segments” (defined as “that portion of the population located in a contiguous area of suitable habitat throughout which gene flow is relatively unrestricted”) from the two-dimensional point data. These population segments were then assessed using a combination of a habitat suitability rating and data on how recently and/or frequently black pinesnakes had been recorded at the site. By examining historical population segments, Duran and Givens (2001, p. 10) determined that 22 of the 36 (61 percent) population segments known at the time of their study were either extirpated (subspecies no longer present), or were in serious jeopardy of extirpation.

The black pinesnake is difficult to locate even in areas where it is known to occur. From the 14 population segments not determined to be in serious jeopardy of extirpation from the 2001 assessment by Duran and Givens, we estimate that there are 11 populations of black pinesnakes today. Our estimate of the number of populations was derived using record data (post-1990) from species/subspecies experts, Natural Heritage Programs, State wildlife agencies, site assessments by Duran and Givens (2001, pp. 1-35), overlain on current Geographic Information Systems (GIS) analysis of habitat. A population was determined to be distinct if it was separated from other localities by more than 1.3 miles (mi.) (2.1 kilometers (km)). This buffer radius distance was chosen based

on movement and home range data provided by black pinesnake researchers (Duran 1998b, pp. 15-19; Yager *et al.* 2005, pp. 27-28; Baxley and Qualls 2009, pp. 287-288). Five of these 11 populations occur in Alabama and 6 in Mississippi. We are unsure of how many individuals are within each population, but they may vary in size from a few individuals to more than 100 in the largest population.

Current GIS analysis of these 11 potential black pinesnake populations, in addition to the assessments by Duran and Givens (2001, pp. 1-35), indicates that 3 of the 11 populations, all located in Alabama, are likely not viable in the long term due to their small size, lack of recent records in the areas of these populations, presence on or proximity to highly fragmented habitat, and/or lack of protection and habitat management for the site. The majority of the known black pinesnake records, and much of the best remaining habitat, occur within the two ranger districts that make up the De Soto NF in Mississippi. These lands represent a small fraction of the former longleaf pine ecosystem that was present in Louisiana, Mississippi, and Alabama, and historically occupied by the subspecies. At this time, we believe the 6 populations in Mississippi (5 on the De Soto NF and one in Marion County) and two sites in Alabama (in Clarke County) are the only ones considered likely to persist long term. Protection and management specifically addressing black pinesnake populations are covered under the Department of Defense integrated natural resources management plan (INRMP) for Camp Shelby in Forrest and Perry Counties, Mississippi; however, this plan covers less than 10 percent of one of the Mississippi populations.

Summary of Factors Affecting the Species

Section 4 of the Act (16 U.S.C. 1533), and its implementing regulations at 50 CFR part 424, set forth the procedures for adding species to the Federal Lists of Endangered and Threatened Wildlife and Plants. Under section 4(a)(1) of the Act, we may list a species based on (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence. Listing actions may be warranted based on any of the above threat factors, singly or in combination.

Factor A: The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range.

Fire-maintained southern pine ecosystems, particularly the longleaf pine ecosystem, have declined dramatically across the South. Current estimates show that the longleaf pine forest type has declined 96 percent from the historical estimate of 88 million ac (35.6 million ha) to approximately 3.3 million ac (1.3 million ha) (Oswalt *et al.* 2012, p. 13). During the latter half of the 20th century, Louisiana, Alabama, and Mississippi lost between 60 and 90 percent of their longleaf acreage (Outcalt and Sheffield 1996, pp. 1-10). Recently, longleaf acreage has been trending upward in parts of the Southeast through restoration efforts, but these increases do not align with the range of the black pinesnake (Ware, pers. comm., 2014). Southern forest futures models

predict declines of forest land area between 2 and 10 percent in the next 50 years, with loss of private forest land to urbanization accounting for most of this loss (Wear and Greis 2013, p. 78). Natural longleaf pine forests, which are characterized by a high, open canopy and shallow litter and duff layers, have evolved to be maintained by frequent, low intensity fires, which in turn restrict a woody midstory, and promote the flowering and seed production of fire-stimulated groundcover plants (Oswalt *et al.* 2012, pp. 2-3). Although black pinesnakes will occasionally utilize open-canopied forests with overstories of loblolly, slash, and other pines, they are closely associated with natural longleaf pine forests, which have an abundant herbaceous groundcover (Duran 1998a, p. 11; Baxley *et al.* 2011, p. 161; Smith 2011, pp. 86, 100) necessary to support the black pinesnake's prey base (Miller and Miller 2005, p. 202).

The current and historical range of the black pinesnake is highly correlated with the current and historical range of these natural longleaf pine forests, leading to the hypothesis that black pinesnake populations, once contiguous throughout these forests in Alabama, Mississippi, and southeast Louisiana, have declined proportionately with the ecosystem (Duran and Givens 2001, pp. 2-3). In the range of the black pinesnake, longleaf pine is now largely confined to isolated patches on private land and larger parcels on public lands. Black pinesnake habitat has been eliminated through land use conversions, primarily conversion to agriculture and pine plantations and development of urban areas. Most of the remaining patches of longleaf pine on private land within the range of the snake are fragmented, degraded, second-growth forests (see discussion under *Factor E: Other Natural or Manmade Factors Affecting Its Continued Existence*).

Conversion of longleaf pine forest to pine plantation often reduces the quality and suitability of a site for black pinesnakes. Duran (1998b, p. 31) found that black pinesnakes prefer the typical characteristics of the longleaf pine ecosystem, such as open canopies, reduced mid-stories, and dense herbaceous understories. He also found that these snakes are frequently underground in rotting pine stumps. Pine plantations typically have closed canopies and thick mid-stories with limited herbaceous understories. Site preparation for planting of pine plantations frequently involves clearing of downed logs and stumps, thereby interfering with the natural development of stump holes and root channels through decay or from burning, and greatly reducing the availability of suitable refugia (Rudolph *et al.* 2007, p. 563). This could have negative consequences if the pinesnakes are no longer able to locate a previous year's refugium, and are subject to overexposure from thermal extremes or elevated predation risk due to increased above-ground activity.

When a site is converted to agriculture, all vegetation is cleared and underground refugia are destroyed during soil disking and compaction. Forest management strategies, such as fire suppression (see discussion under *Factor E: Other Natural or Manmade Factors Affecting Its Continued Existence*), increased stocking densities, planting of off-site pine species (i.e., slash and loblolly pines), bedding, and removal of downed trees and stumps, all contribute to degradation of habitat attributes preferred by black pinesnakes. It is possible that the presence and distribution of decaying stump holes and

their associated rotting root channels may be a feature that limits the abundance of black pinesnakes within their range (Baxley 2007, p. 44).

Baxley *et al.* (2011, pp. 162-163) compared habitat at recent (post-1987) and historical (pre-1987) black pinesnake localities. She found that sites recently occupied by black pinesnakes were characterized by significantly less canopy cover; lower basal area; less midstory cover; greater percentages of grass, bare soil, and forbs in the groundcover; less shrubs and litter in the groundcover; and a more recent burn history than currently unoccupied, but historical, sites. At the landscape level, black pinesnakes selected upland pine forests that lacked cultivated crops, pasture and hay fields, developed areas, and roads (Baxley *et al.* 2011, p. 154). Thus, areas historically occupied by black pinesnakes are becoming unsuitable at both the landscape and microhabitat (small-scale habitat component) levels (Baxley *et al.* 2011, p. 164).

Degradation and loss of longleaf pine habitat within the range of the black pinesnake is continuing. The coastal counties of southern Mississippi and Mobile County, Alabama, are being developed at a rapid rate due to increases in the human population. While forecast models show that federal forest land will remain relatively unchanged in the next few decades, projected losses in forest land are highest in the South, with declines in private forest land from urbanization accounting for most of the loss (Wear 2011, p. 31). Urbanization appears to have reduced historical black pinesnake populations in Mobile County by approximately 50 percent (Duran 1998a, p. 17), with some areas directly surrounding Mobile thought to be potentially extirpated by the

Alabama Natural Heritage Program. Substantial population declines were noted throughout the 1970s and 1980s (Mount 1986, p. 35). Jennings and Fritts (1983, p. 8) reported that, in the 1980s, the black pinesnake was one of the most frequently encountered snakes on the Environmental Studies Center (Center) in Mobile County. Urban development has now engulfed lands adjacent to the Center, and black pinesnakes are thought to have been extirpated from the property (Duran 1998a, p. 10). Black pinesnakes were commonly seen in the 1970s on the campus of the University of South Alabama in western Mobile; however, there have not been any observations in at least the past 25 years (Nelson 2014, p. 1).

Conservation Efforts to Reduce Habitat Destruction, Modification, or Curtailment of Its Range

When considering whether or not to list a species under the Act, we must identify existing conservation efforts and their effect on the species. The Mississippi Army National Guard (MSARNG) has drafted a candidate conservation agreement (CCA) for the black pinesnake (MSARNG 2013, pp. 1-36). The purpose of this voluntary agreement is to implement proactive conservation and management measures for the black pinesnake and its habitat throughout the De Soto NF, which includes the MSARNG's Camp Shelby Joint Forces Training Center (Camp Shelby). Parties to the agreement include the U.S. Department of Agriculture, Forest Service; U.S. Department of Defense (DoD), Army National Guard; the Service; and the Mississippi Department of Wildlife, Fisheries, and Parks (MDWFP). The goal of the final agreement will be to

significantly reduce the threats upon the black pinesnake to improve its conservation status. We are currently working with the MSARNG, Forest Service, and MDWFP to complete the CCA. When conservation efforts defined in the CCA are implemented, they should help maintain black pinesnake habitat on Camp Shelby and the De Soto NF.

The largest remaining populations of black pinesnakes (5 of 11) occur in the De Soto NF, which is considered the core of the subspecies' known range. The black pinesnake likely receives benefit from longleaf pine restoration efforts, including prescribed fire, implemented by the Forest Service in accordance with its Forest Plan, in habitats for the federally listed gopher tortoise (*Gopherus polyphemus*) and red-cockaded woodpecker (*Picoides borealis*). Additional actions specifically targeting the conservation needs of the black pinesnake should occur when the CCA is finalized and implemented. These targeted actions primarily address the exclusion of stumping (stump removal) during forestry activities, to maintain the underground refugia utilized by pinesnakes, and the establishment and maintenance of larger tracts of suitable habitat to accommodate the home ranges of multiple snakes constituting a breeding population. The CCA should also include a monitoring protocol to track the demography and abundance of black pinesnake populations.

The MSARNG recently updated its Integrated Natural Resources Management Plan (INRMP) and outlined conservation measures to be implemented specifically for the black pinesnake on lands owned by the DoD and the State of Mississippi on Camp Shelby. Planned conservation measures include: Supporting research and surveys on the

subspecies; habitat management specifically targeting the black pinesnake, such as retention of pine stumps and prescribed burning; and educational programs for users of the training center to minimize negative impacts of vehicular mortality on wildlife (MSARNG 2014, pp. 93-94). The INRMP addresses integrative management and conservation measures only on the lands owned and managed by DoD and the State of Mississippi (15,195 ac (6,149 ha)), which make up only 11 percent of the total acreage of Camp Shelby (132,195 ac (53,497 ha)), most of which is owned and managed by the Forest Service. Only 5,735 ac (2,321 ha) of the acreage covered by the INRMP provides habitat for the black pinesnake. The larger proportion of habitat on Camp Shelby is managed by the Forest Service in accordance with their Forest Plan.

Longleaf pine habitat restoration projects have been conducted on selected private lands within the range historically occupied by the black pinesnake and may provide benefits to the subspecies (U.S. Fish and Wildlife Service 2012, pp. 12-13). Additionally, restoration projects have been conducted on wildlife management areas (WMAs) (Marion County WMA in Mississippi; and Scotch, Fred T. Stimpson, and Boykin WMAs in Alabama) occupied by black pinesnakes, and on three gopher tortoise relocation areas in Mobile County, Alabama. These gopher tortoise relocation areas are managed for the open-canopied, upland longleaf pine habitat used by both gopher tortoises and black pinesnakes, and have had recent records of black pinesnakes on the property; however, the managed areas are all less than 700 ac (283 ha) and primarily surrounded by urban areas with incompatible habitat. Therefore, we do not believe they would be able to support more than a few (i.e., likely less than five) individual pinesnakes

with partially-overlapping home ranges, and likely do not provide sufficient area to support viable populations. There is beneficial habitat management occurring on some of these WMAs and on the tortoise relocation areas. However, these efforts do not currently target the retention or restoration of black pinesnake habitat, which would also include reduction in stump removal and management targeted to maintain larger, unfragmented tracts of open longleaf habitat. We will continue to work with our State partners to encourage the incorporation of these practices, where appropriate.

In summary, the loss and degradation of habitat was a significant historical threat and remains a current threat to the black pinesnake. The historic loss of longleaf pine upland habitat occupied by black pinesnakes occurred primarily due to timber harvest and subsequent conversion of pine forests to agriculture, residential development, and intensively managed pine plantations. This loss of habitat, which has slowed considerably in recent years, in part due to efforts to restore the longleaf pine ecosystem in the Southeast, is still presently compounded by current losses in habitat due to habitat fragmentation (see discussion under *Factor E: Other Natural or Manmade Factors Affecting Its Continued Existence*), incompatible forestry practices, conversion to agriculture, and urbanization. While the use of prescribed fire for habitat management and more compatible site preparation has seen increased emphasis in recent years, expanded urbanization, fragmentation, and regulatory constraints will continue to restrict the use of fire and cause further habitat degradation (Wear and Greis 2013, p. 509). Conservation efforts are implemented or planned that should help maintain black pinesnake habitat on Camp Shelby and the De Soto NF; however, these areas represent a

small fraction of the current range of the subspecies. Populations on the periphery of the range have conservation value as well in terms of maintaining the subspecies' genetic integrity (i.e., maintaining the existing genetic diversity still inherent in populations that have not interbred in hundreds or thousands of years) and providing future opportunities for population connectivity and augmentation. Many of the populations on the edge of the range are smaller, which increases their susceptibility to localized extinction from catastrophic and stochastic events, subsequently causing further restriction of the subspecies' range. Although the black pinesnake was thought to be fairly common in parts of south Alabama as recently as 30 years ago, we believe most populations have disappeared or drastically declined due to continued habitat loss and fragmentation. For instance several sites where snakes have been captured historically are now developed and no longer contain habitat. Thus, habitat loss and continuing degradation of the black pinesnake's habitat remains a significant threat to this subspecies' continued existence.

Factor B: Overutilization for Commercial, Recreational, Scientific, or Educational Purposes.

Although there is some indication that collecting for the pet trade may have been a problem (Duran 1998a, p. 15), and that localized accounts of a thriving pet trade for pinesnakes have been reported previously around Mobile, Alabama (Vandeventer and Young 1989, p. 34), direct take of black pinesnakes for recreational, scientific, or educational purposes is not currently considered to be a significant threat. This overutilization would be almost exclusively to meet the demand from snake enthusiasts

and hobbyists; however, the pet trade is currently saturated with captive-bred black pinesnakes. The need for the collection of wild specimens is thought to have declined dramatically from the levels previously observed in the 1960s and 1970s (Vandeventer 2014). Consequently, we have determined that overutilization for commercial, recreational, scientific, or educational purposes is not a threat to the black pinesnake at this time.

Factor C: Disease or Predation.

Disease is not presently considered to be a threat to the black pinesnake. However, snake fungal disease (SFD) is an emerging disease in certain populations of wild snakes, even though specific pathological criteria for the disease have not yet been established. This disease, which has been linked to mortality events, has not been documented in *Pituophis* or in any of the States within the range of the black pinesnake, but is suspected of threatening the viability of small, isolated populations of susceptible snake species and should be monitored during all future research activities (Sleeman 2013, pp. 1-3).

Red imported fire ants (*Solenopsis invicta*), an invasive species, have been implicated in trap mortalities of black pinesnakes during field studies (Baxley 2007, p. 17). They are also potential predators of black pinesnake eggs, especially in disturbed areas (Todd *et al.* 2008, p. 544). In 2010 and 2011, trapping for black pinesnakes was conducted in several areas that were expected to support the subspecies; no black

piresnakes were found, but high densities of fire ants were reported (Smith 2011, pp. 44-45). The severity and magnitude of effects, as well as the long-term effects, of fire ants on black pinesnake populations are currently unknown.

Other predators of pinesnakes include red-tailed hawks, raccoons, skunks, red foxes, and feral cats (Ernst and Ernst 2003, p. 284; Yager *et al.* 2006, p. 34). Lyman *et al.* (2007, p. 39) reported an attack on a black pinesnake by a stray domestic dog, which resulted in the snake's death. Several of these mammalian predators are anthropogenically enhanced (urban predators); that is, their numbers often increase with human development adjacent to natural areas (Fischer *et al.* 2012, pp. 810-811). However, the severity and magnitude of predation by these species are unknown.

In summary, disease is not considered to be a threat to the black pinesnake at this time. However, predation by fire ants and urban predators may represent a threat to the black pinesnake.

Factor D: The Inadequacy of Existing Regulatory Mechanisms.

In Mississippi, the black pinesnake is classified as endangered by the Mississippi Department of Wildlife, Fisheries and Parks (Mississippi Museum of Natural Science 2001, p. 1). In Alabama, it is protected as a non-game animal (Alabama Department of Conservation and Natural Resources 2014, p. 1). In Louisiana, the black pinesnake is considered extirpated (Louisiana Department of Wildlife and Fisheries 2014, p. 2);

however, Louisiana Revised Statutes for Wildlife and Fisheries were recently amended to prohibit killing black pinesnakes or removing them from the wild (Louisiana Administrative Code, 2014, p. 186), should they be found in the State again. Both Mississippi and Alabama have regulations that restrict collecting, killing, or selling of the subspecies, but do not have regulations addressing habitat loss, which has been the primary cause of decline of this subspecies.

Where the subspecies co-occurs with species already listed under the Act, the black pinesnake likely receives ancillary benefits from the protective measures for the already listed species, including the gopher tortoise, dusky gopher frog (*Rana sevosa*), and red-cockaded woodpecker.

The largest known expanses of suitable habitat for the black pinesnake are in the De Soto NF in Mississippi. The black pinesnake's habitat is afforded some protection under the National Forest Management Act (NFMA; 16 U.S.C. 1600 et seq.) where it occurs on lands managed by the Forest Service that are occupied by federally listed species such as the gopher tortoise and red-cockaded woodpecker. Forest Service rules and guidelines implementing NFMA require land management plans that include provisions supporting recovery of endangered and threatened species. As a result, land managers on the De Soto NF have conducted management actions, such as prescribed burning and longleaf pine restoration, which benefit gopher tortoises, red-cockaded woodpeckers, and black pinesnakes. However, they do not fully address the microhabitat needs of the black pinesnake, such as restrictions on stump removal, which is detrimental

to black pinesnakes because of the subspecies' utilization of pine stumps and root channels as refugia (Duran 1998a, p. 14). They continue to work with the Service and other partners to develop and implement a CCA.

As discussed under Factor A above, the MSARNG recently updated its INRMP for Camp Shelby, and outlined conservation measures to be implemented specifically for the black pinesnake on 5,735 ac (2,321 ha) of potential pinesnake habitat owned or managed by DoD. These measures will benefit black pinesnake populations, and include a monitoring protocol to help evaluate the population and appropriate guidelines for maintaining suitable habitat and microhabitats.

In summary, outside of the National Forest and the area covered by the INRMP, existing regulatory mechanisms provide little protection from the primary threat of habitat loss for some populations of the black pinesnake. Longleaf restoration activities on Forest Service lands in Mississippi conducted for other federally listed species do improve habitat for black pinesnake populations located in those areas, but could be improved by ensuring the protection of the belowground refugia critical to the snake.

Factor E: Other Natural or Manmade Factors Affecting Its Continued Existence.

Fire is the preferred management technique to maintain the longleaf pine ecosystem, and fire suppression has been considered a primary reason for the degradation of the remaining longleaf pine forest. It is a contributing factor in reducing the quality

and quantity of available habitat for the black pinesnake. Some of the forecasts for southern forests are that land use changes involving fuels management will continue to constrain prescribed fire efforts, and that safety and health regulations and increased urban interface will add to those constraints, making prescribed burning even more challenging in the future (Wear and Greis 2013, p. 509). Reduced fire frequencies and reductions in average area burned per fire event (strategies often used in management of pine plantations) produce sites with thick mid-stories, and these areas are avoided by black pinesnakes (Duran 1998b, p. 32). During a 2005 study using radio-telemetry to track black pinesnakes, a prescribed burn bisected the home range of one of the study animals. The snake spent significantly more time in the recently burned area than in the area that had not been burned in several years (Smith 2005, 5 pp.).

Habitat fragmentation within the longleaf pine ecosystem threatens the continued existence of all black pinesnake populations, particularly those on private lands. This is frequently the result of urban development, conversion of longleaf pine sites to pine plantations, and the associated increases in number of roads. Private forest ownership dynamics in the South are trending towards increased parcellation (e.g., the splitting up of large tracts of land), which could lead to greater fragmentation through estate disposal and urbanization (Wear and Greis 2013, p. 103). When patches of available habitat become separated beyond the dispersal range of a species, populations are more sensitive to genetic, demographic, and environmental variability, and extinction becomes possible. This is likely a primary cause for the extirpation of the black pinesnake in Louisiana and

the subspecies' contracted range in Alabama and Mississippi (Duran and Givens 2001, pp. 22-26).

Private landowners hold more than 86 percent of forests in the South and produce nearly all of the forest investment and timber harvesting in the region (Wear and Greis 2013, p. 103). Forecasts indicate a loss of 11 to 23 million ac (4.5 million to 9.3 million ha) of private forest land in the South by 2060. This loss, combined with expanding urbanization and ongoing splitting of ownership as estates are divided, will result in increased fragmentation of remaining forest holdings (Wear and Greis 2013, p. 119). This assessment of continued future fragmentation throughout the range of the black pinesnake, coupled with the assumption that large home range size increases extinction vulnerability, emphasizes the importance of conserving and managing large tracts of contiguous habitat to protect the black pinesnake (Baxley 2007, p. 65). This is in agreement with other studies of large, wide-ranging snake species sensitive to landscape fragmentation (Hoss *et al.* 2010; Breininger *et al.* 2012). When factors influencing the home range sizes of the eastern indigo snake (*Drymarchon corais couperi*) were analyzed, the results suggested that maintaining populations of this subspecies will require large conservation areas with minimum fragmentation (Breininger *et al.* 2011, pp. 484-490).

Roads surrounding and traversing the remaining black pinesnake habitat pose a direct threat to the subspecies. Dodd *et al.* (2004, p. 619) determined that roads fragment habitat for wildlife. Population viability analyses have shown that road mortality

estimates in some snake species have greatly increased extinction probabilities (Row *et al.* 2007, p. 117). In an assessment of data from radio-tracked eastern indigo snakes, it was found that adult snakes have relatively high survival in conservation core areas, but greatly reduced survival in edges of these areas along highways, and in suburbs (Breininger *et al.* 2012, p. 361). Clark *et al.* (2010, pp. 1059-1069) studied the impacts of roads on population structure and connectivity in timber rattlesnakes (*Crotalus horridus*). They found that roads interrupted dispersal and negatively affected genetic diversity and gene flow among populations of this large snake (Clark *et al.* 2010, p. 1059). In a Texas snake study, an observed deficit of snake captures in traps near roads suggests that a substantial proportion of the total number of snakes may have been eliminated due to road-related mortality and that populations of large snakes may be depressed by 50 percent or more due to this mortality (Rudolph *et al.* 1999, p. 130).

A modeling study by Steen *et al.* (2012, p. 1092) determined that fragmentation by roads may be an impediment to maintaining viable populations of pinesnakes. Black pinesnakes frequent the sandy hilltops and ridges where roads are most frequently sited. Even on public lands, roads are a threat. During Duran's (1998b pp. 6, 34) study on Camp Shelby, Mississippi, 17 percent of the black pinesnakes with transmitters were killed while attempting to cross a road. In a larger study currently being conducted on Camp Shelby, 14 (38 percent) of the 37 pinesnakes found on the road between 2004 to 2012 were found dead, and these 14 individuals represent about 13 percent of all the pinesnakes found on Camp Shelby during that 8-year span (Lyman *et al.* 2012, p. 42). The majority of road crossings occurred between the last 2 weeks of May and the first 2

weeks of June (Lyman *et al.* 2011, p. 48), a time period when black pinesnakes are known to breed (Lyman *et al.* 2012, p. 42). In the study conducted by Baxley (2007, p. 83) on De Soto NF, 2 of the 8 snakes monitored with radio-transmitters were found dead on paved roads. This is an especially important issue on these public lands because the best remaining black pinesnake populations are concentrated there. It suggests that population declines may be due in part to adult mortality in excess of annual recruitment (Baxley and Qualls 2009, p. 290).

Exotic plant species degrade habitat for wildlife. In the Southeast, longleaf pine forest associations are susceptible to invasion by the exotic cogongrass (*Imperata cylindrica*), which may rapidly encroach into areas undergoing habitat restoration, and is very difficult to eradicate once it has become established, requiring aggressive control with herbicides (Yager *et al.* 2010, pp. 229-230). Cogongrass displaces native grasses, greatly reducing foraging areas, and forms thick mats so dense that ground-dwelling wildlife has difficulty traversing them (DeBerry and Pashley 2008, p. 74).

In many parts of Louisiana, Mississippi, and Alabama, there is a lack of understanding of the importance of snakes to a healthy ecosystem. Snakes are often killed intentionally when they are observed, and dead pinesnakes have been found that have been shot (Duran 1998b, p. 34). Lyman *et al.* (2008, p. 34) and Duran (1998b, p. 34) both documented finding dead black pinesnakes that were intentionally run over as evidenced by vehicle tracks that went off the road in vicinity of dead snakes. In addition, in one of these instances (Lyman *et al.* 2008, p. 34), footprints were observed going from

the vicinity of the truck to the snake's head, which had been intentionally crushed. As development pressures mount on remaining black pinesnake habitat, human-snake interactions are expected to increase, which in turn is expected to increase mortality, especially of adults.

Duran (1998b, p. 36) suggested that reproductive rates of wild black pinesnakes may be low, based on failure to detect either nests or mating behaviors during his studies. For long-lived species, animals are expected to replace themselves over their lifespan in order for the population growth rate to remain stable or grow; therefore, if mortality of breeding adults is high, population declines can result. Thus, the loss of mature adults through road mortality, direct killing, or any other means increases in significance. As existing occupied habitat becomes reduced in quantity and quality, low reproductive rates threaten population viability.

Random environmental events may also play a part in the decline of the black pinesnake. Two black pinesnakes were found dead on the De Soto NF during drought conditions of mid-summer and may have succumbed due to drought-related stress (Baxley 2007, p.41).

In summary, a variety of natural or manmade factors currently threaten the black pinesnake. Fire suppression has been considered a primary reason for degradation of the longleaf pine ecosystem; however, invasive species such as cogongrass also greatly reduce the habitat quality for the black pinesnake. Isolation of populations beyond the

dispersal range of the subspecies is a serious threat due to the fragmentation of available habitat. The high percentage of radio-tracked black pinesnakes killed while trying to cross roads supports our conclusion that this is a serious threat, and human attitudes towards snakes represent another source of mortality. Stochastic threats such as drought have the potential to threaten black pinesnake populations, and the suspected low reproductive rate of the subspecies could exacerbate other threats and limit population viability. Overall, the threats under Factor E may act in combination with threats listed above under Factors A through D and increase their severity.

Proposed Determination

We have carefully assessed the best scientific and commercial information available regarding the past, present, and future threats to the black pinesnake. The black pinesnake is considered extirpated from Louisiana and three counties in Mississippi. Threats to the remaining black pinesnake populations exist primarily from two of the five threat factors (Factors A and E); however, predation by fire ants and urban predators (Factor C), and limitations of existing laws and regulations (Factor D) also pose lower-magnitude threats to the subspecies.

Threats also occur in combination, resulting in synergistically greater effects. Threats of habitat loss and degradation (Factor A) represent primary threats to the black pinesnake. While habitat restoration efforts are beginning to reverse the decline of the longleaf pine forest in the Southeastern U.S., most of the black pinesnake's habitat has

been either converted from forests to other uses or is highly fragmented. Today, the longleaf pine ecosystem occupies less than 4 percent of its historical range, and the black pinesnake has been tied directly to this ecosystem. For instance, much of the habitat outside of the National Forest in Mississippi (the stronghold of the range) has become highly fragmented, and populations on these lands appear to be small and isolated on islands of suitable longleaf pine habitat (Duran 1998a, p. 17; Barbour 2009, pp. 6-13).

A habitat suitability study of all historical sites for the black pinesnake estimated that this subspecies likely no longer occurs in an estimated 60 percent of historical population segments. It is estimated that only 11 populations of black pinesnakes are extant today, of which about a third are located on isolated patches of longleaf pine habitat that continue to be degraded due to fire suppression and fragmentation (Factor E), incompatible forestry practices, and urbanization.

Threats under Factor E include fire suppression; roads; invasive plant species, such as cogongrass; random environmental events, such as droughts; intentional killing by humans; and low reproductive rates. Fire suppression and invasive plants result in habitat degradation. Roads surround and traverse the ridges, which define black pinesnake habitat, and cause fragmentation of the remaining habitat. Further, vehicles travelling these roads cause the death of a high number of snakes. Roads also increase the rate of human-snake interactions, which likely result in the death of individual snakes. Episodic effects of drought and low reproductive rates of wild black pinesnakes further threaten this subspecies' population viability. These threats in combination lead to an

increased chance of local extirpations by making populations more sensitive to genetic, demographic, and environmental variability.

The threats that affect the black pinesnake are important on a threat-by-threat basis, but are even more significant in combination. Habitat loss has been extensive throughout the black pinesnake's range, and the remaining habitat has been fragmented into primarily small patches with barriers to dispersal between them, creating reproductively isolated individuals or populations. The inadequacy of laws and regulations protecting against habitat loss contributes to increases in urbanization and further fragmentation. Urbanization results in an increased density of roads, intensifying the potential for direct mortality of adult snakes, and reductions in population sizes. Reductions in habitat quality have synergistic effects, compounded by low reproductive rates, to cause localized extirpations. Threats to the black pinesnake, working individually or in combination, are ongoing and significant and have resulted in curtailment of the range of the subspecies.

The Act defines an endangered species as any species that is "in danger of extinction throughout all or a significant portion of its range" and a threatened species as any species "that is likely to become endangered throughout all or a significant portion of its range within the foreseeable future." We find that the black pinesnake meets the definition of a threatened species based on the immediacy, severity, and scope of the threats described above. Most of the longleaf pine habitat within the historical range of the black pinesnake has disappeared, and the remaining habitat exists primarily in

fragmented patches too small to support a viable population. Current black pinesnake habitat continues to be lost or degraded due to fire suppression, incompatible forestry practices, and urbanization, and it appears this trend will continue in the future. Only 11 populations are estimated to be extant, and several of these exist in small numbers, are located on fragmented habitat, or have no protection or management in place; thus, their potential for long-term survival is questionable.

We find that endangered status is not appropriate for the black pinesnake because, while we found the threats to the subspecies to be significant and rangewide, we do not know them to be either sudden or calamitous. Although there is a general decline in the overall range of the subspecies and its available habitat, the rate of decline has slowed in recent years due to restoration efforts, and range contraction is not severe enough to indicate imminent extinction. A significant proportion of the remaining black pinesnake populations (45 percent) occur primarily on public lands that are at least partially managed to protect remaining longleaf pine habitat; management efforts on those lands specifically targeting listed longleaf pine specialists, such as the gopher tortoise and red-cockaded woodpecker, should benefit the black pinesnake as well, especially if measures are employed to protect below-ground refugia. Additionally, the 5,735 ac (2,321 ha) covered by the Camp Shelby INRMP are under a conservation plan specifically protecting black pinesnake microhabitats and increasing awareness of the human impacts to rare wildlife. The CCA currently under development with the Forest Service, MDWFP, and MSARNG should provide an elevated level of focused conservation and management for the black pinesnake on their lands. Because of these existing efforts and

management plans, this subspecies does not meet the definition of an endangered species. Therefore, on the basis of the best available scientific and commercial information, we propose listing the black pinesnake as threatened in accordance with sections 3(20) and 4(a)(1) of the Act.

Under the Act and our implementing regulations, a species may warrant listing if it is endangered or threatened throughout all or a significant portion of its range. Because we have determined that black pinesnake is threatened throughout all of its range, no portion of its range can be "significant" for purposes of the definitions of "endangered species" and "threatened species." See the Final Policy on Interpretation of the Phrase "Significant Portion of Its Range" in the Endangered Species Act's Definitions of "Endangered Species" and "Threatened Species" (79 FR 37577).

Available Conservation Measures

Several conservation efforts already exist for the black pinesnake. The MSARNG recently updated its INRMP and outlined conservation measures to be implemented specifically for the black pinesnake on lands owned by the Department of Defense (DoD) and the State of Mississippi on Camp Shelby. Planned conservation measures include: Supporting research and surveys on the subspecies; habitat management specifically targeting the black pinesnake, such as retention of pine stumps and prescribed burning; and educational programs for users of the training center to minimize negative impacts of vehicular mortality on wildlife (MSARNG 2014, pp. 93-94). The INRMP addresses

integrative management and conservation measures on the lands owned and managed by DoD and the State of Mississippi (15,195 ac (6,149 ha)), which make up 11 percent of the total acreage of Camp Shelby (132,195 ac (53,497 ha)), most of which is owned and managed by the Forest Service.

The Mississippi Army National Guard (MSARNG) has also drafted a candidate conservation agreement (CCA) for the black pinesnake (MSARNG 2013, pp. 1-36). The purpose of this voluntary agreement is to implement proactive conservation and management measures for the black pinesnake and its habitat throughout the De Soto NF, which includes Camp Shelby. While the black pinesnake benefits from actions taken in these areas for other listed species, additional actions specifically targeting the conservation needs of the pinesnake should occur when the CCA is finalized and implemented.

Longleaf pine habitat restoration projects have been conducted on selected private lands within the range historically occupied by the black pinesnake and may provide benefits to the subspecies (U.S. Fish and Wildlife Service 2012, pp. 12-13).

Additionally, restoration projects have been conducted on wildlife management areas (WMAs) (Marion County WMA in Mississippi; and Scotch, Fred T. Stimpson, and Boykin WMAs in Alabama) occupied by black pinesnakes, and on three gopher tortoise relocation areas in Mobile County, Alabama. These gopher tortoise relocation areas are managed for the open-canopied, upland longleaf pine habitat used by both gopher

tortoises and black pinesnakes, and have had recent records of black pinesnakes on the property.

Other conservation measures which would be provided to species listed as endangered or threatened under the Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing results in public awareness, and conservation by Federal, State, Tribal, and local agencies; private organizations; and individuals. The Act encourages cooperation with the States and requires that recovery actions be carried out for all listed species. The protection required by Federal agencies and the prohibitions against certain activities are discussed, in part, below.

The primary purpose of the Act is the conservation of endangered and threatened species and the ecosystems upon which they depend. The ultimate goal of such conservation efforts is the recovery of these listed species, so that they no longer need the protective measures of the Act. Subsection 4(f) of the Act requires the Service to develop and implement recovery plans for the conservation of endangered and threatened species. The recovery planning process involves the identification of actions that are necessary to halt or reverse the species' decline by addressing the threats to its survival and recovery. The goal of this process is to restore listed species to a point where they are secure, self-sustaining, and functioning components of their ecosystems.

Recovery planning includes the development of a recovery outline shortly after a species is listed and preparation of a draft and final recovery plan. The recovery outline guides the immediate implementation of urgent recovery actions and describes the process to be used to develop a recovery plan. Revisions of the plan may be done to address continuing or new threats to the species, as new substantive information becomes available. The recovery plan identifies site-specific management actions that set a trigger for review of the five factors that control whether a species remains endangered or may be downlisted or delisted, and methods for monitoring recovery progress. Recovery plans also establish a framework for agencies to coordinate their recovery efforts and provide estimates of the cost of implementing recovery tasks. Recovery teams (composed of species experts, Federal and State agencies, nongovernmental organizations, and stakeholders) are often established to develop recovery plans. If the species is listed, a recovery outline, draft recovery plan, and the final recovery plan would be made available on our website (<http://www.fws.gov/endangered>) and from our Mississippi Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Section 7(a) of the Act requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as an endangered or threatened species and with respect to its critical habitat, if any is designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(4) of the Act requires Federal agencies to confer with the Service on any action that is likely to jeopardize the continued existence of a species proposed for listing

or result in destruction or adverse modification of proposed critical habitat. If a species is listed subsequently, section 7(a)(2) of the Act requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of the species or destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into consultation with the Service.

Federal agency actions within the subspecies' habitat that may require conference or consultation or both as described in the preceding paragraph include management and any other landscape-altering activities on Federal lands administered by the Forest Service or on National Wildlife Refuges managed by the Service; issuance of section 404 Clean Water Act (33 U.S.C. 1251 et seq.) permits by the U.S. Army Corps of Engineers; construction and maintenance of gas pipeline and power line rights-of-way by the Federal Energy Regulatory Commission; construction and maintenance of roads or highways by the Federal Highway Administration; land management practices supported by programs administered by the U.S. Department of Agriculture; Environmental Protection Agency pesticide registration; and projects funded through Federal loan programs which may include, but are not limited to, roads and bridges, utilities, recreation sites, and other forms of development.

The Act and its implementing regulations set forth a series of general prohibitions and exceptions that apply to all endangered and threatened wildlife. The prohibitions of section 9(a)(2) of the Act, codified at 50 CFR 17.21 for endangered wildlife, in part,

make it illegal for any person subject to the jurisdiction of the United States to take (includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect; or to attempt any of these), import, export, ship in interstate commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any listed species. Under the Lacey Act (18 U.S.C. 42–43; 16 U.S.C. 3371–3378), it is also illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. Certain exceptions apply to agents of the Service and State conservation agencies. 50 CFR 17.31 generally applies the prohibitions for endangered wildlife to threatened wildlife, unless a rule issued under section 4(d) of the Act is adopted by the Service.

We may issue permits to carry out otherwise prohibited activities involving endangered and threatened wildlife species under certain circumstances. Regulations governing permits are codified at 50 CFR 17.22 for endangered species, and at 17.32 for threatened species. With regard to threatened and endangered wildlife, a permit must be issued for the following purposes: for scientific purposes, to enhance the propagation or survival of the species, and for incidental take in connection with otherwise lawful activities.

It is our policy, as published in the **Federal Register** on July 1, 1994 (59 FR 34272), to identify to the maximum extent practicable at the time a species is listed, those activities that would or would not constitute a violation of section 9 of the Act, if the species is listed. The intent of this policy is to increase public awareness of the effect of

a proposed listing on proposed and ongoing activities within the range of species proposed for listing. The following activities could potentially result in a violation of section 9 of the Act; this list is not comprehensive:

(1) Unauthorized collecting, handling, possessing, selling, delivering, carrying, or transporting of the black pinesnake, including import or export across State lines and international boundaries, except for properly documented antique specimens of these taxa at least 100 years old, as defined by section 10(h)(1) of the Act;

(2) Introduction of nonnative species that compete with or prey upon the black pinesnake;

(3) Unauthorized destruction or modification of occupied black pinesnake habitat (e.g., clearcutting, root raking, bedding) that results in ground disturbance or the destruction of stump holes and their associated root systems used as refugia by the subspecies or that impairs in other ways the subspecies' essential behaviors such as breeding, feeding, or sheltering;

(4) Unauthorized use of insecticides and rodenticides that could impact small mammal prey populations, though either unintended or direct impacts within habitat occupied by black pinesnakes; and

(5) Actions, intentional or otherwise, that would result in the destruction of eggs or cause mortality or injury to hatchling, juvenile, or adult black pinesnakes.

Questions regarding whether specific activities would constitute a violation of section 9 of the Act should be directed to the Mississippi Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Proposed Special Rule

Under section 4(d) of the Act, the Secretary of the Interior has discretion to issue such regulations as she deems necessary and advisable to provide for the conservation of threatened species. The Secretary also has the discretion to prohibit by regulation with respect to a threatened species any act prohibited by section 9(a)(1) of the Act. Exercising this discretion, which has been delegated to the Service by the Secretary, the Service has developed general prohibitions that are appropriate for most threatened species at 50 CFR 17.31 and exceptions to those prohibitions at 50 CFR 17.32. While the prohibitions at 17.31 and 17.32 apply for this species, some activities that would normally be prohibited under 17.31 and 17.32 are necessary for the conservation of this species, because the longleaf wiregrass ecosystem requires active management to ensure appropriate habitat conditions are present. Therefore, for the black pinesnake, the Service has determined that a section 4(d) rule may be appropriate to promote conservation of th this species. As discussed in the **Summary of Factors Affecting the Species** section of this rule, the primary threat to this subspecies is the continuing loss and degradation of habitat. Foremost in the degradation of this subspecies' habitat is the absence of prescribed fire, which reduces the forest mid-story and promotes an abundant

herbaceous groundcover. Fire is a natural component of the longleaf pine ecosystem where the black pinesnake occurs. Another factor affecting the integrity of this ecosystem is the establishment of exotic weeds, particularly cogongrass. Activities such as prescribed burning and noxious weed control, as well as timber management activities associated with restoring and improving the natural habitat to meet the needs of the black pinesnake, would positively affect pinesnake populations and provide an overall conservation benefit to the subspecies.

Provisions of the Proposed Special Rule

This proposed 4(d) rule would exempt from the general prohibitions in 50 C.F.R. 17.32 take incidental to the following activities when conducted within habitats currently or historically occupied by the black pinesnake:

(1) Prescribed burning in the course of habitat management and restoration to benefit black pinesnakes or other native species of the longleaf pine ecosystem.

(2) Noxious weed control, mid-story hardwood control, and hazardous fuels reduction in the course of habitat management and restoration to benefit black pinesnakes or other sensitive species of the longleaf pine ecosystem, provided that these activities are conducted in a manner consistent with Federal law, including Environmental Protection Agency label restrictions; applicable State laws; and herbicide application guidelines as prescribed by herbicide manufacturers.

(3) Restoration along riparian areas and stream buffers.

(4) Intermediate silvicultural treatments (such as planting of longleaf seedlings on existing agricultural or silvicultural sites where mature longleaf stands do not currently exist) performed under a management plan or prescription that is designed to work towards one or more of the following target conditions:

- (a) Mature, longleaf-dominated forest with ≤ 70 percent canopy coverage;
- (b) Hardwood mid-story reductions resulting in < 10 percent mid-story coverage;
- (c) Abundant, diverse, native groundcover covering at least 40 percent of the ground.

All of the activities listed above should be conducted in a manner to maintain connectivity of suitable black pinesnake habitats, allowing dispersal and migration between larger forest stands; to minimize ground and subsurface disturbance by conducting harvests during drier periods when the ground is not saturated, by using low-pressure tires, or both; and to leave stumps, dead standing snags, and woody debris.

We believe these actions and activities, while they may have some minimal level of mortality, harm, or disturbance to the black pinesnake, are not expected to adversely affect the subspecies' conservation and recovery efforts. They would have a net beneficial effect on the subspecies.

Like the proposed listing rule, this proposed special rule will not be finalized until we have reviewed comments from the public and peer reviewers.

Based on the rationale above, the provisions included in this proposed 4(d) rule are necessary and advisable to provide for the conservation of the black pinesnake. Nothing in this proposed 4(d) rule would change in any way the recovery planning provisions of section 4(f) of the Act and consultation requirements under section 7 of the Act or the ability of the Service to enter into partnerships for the management and protection of the black pinesnake.

Critical Habitat

Section 3(5)(A) of the Act defines critical habitat as “(i) the specific areas within the geographical area occupied by the species, at the time it is listed...on which are found those physical or biological features (I) Essential to the conservation of the species and (II) which may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by the species at the time it is listed...upon a determination by the Secretary that such areas are essential for the conservation of the species.” Section 3(3) of the Act (16 U.S.C. 1532(3)) also defines the terms “conserve,” “conserving,” and “conservation” to mean “to use and the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this chapter Act are no longer necessary.”

Section 4(a)(3) of the Act, as amended, and implementing regulations (50 CFR 424.12), require that, to the maximum extent prudent and determinable, the Secretary shall designate critical habitat at the time the species is determined to be an endangered

or threatened species. Our regulations (50 CFR 424.12(a)(1)) state that the designation of critical habitat is not prudent when one or both of the following situations exist:

- (1) The species is threatened by taking or other human activity, and identification of critical habitat can be expected to increase the degree of threat to the species, or
- (2) such designation of critical habitat would not be beneficial to the species.

There is currently no imminent threat of take attributed to collection or vandalism under Factor B for this species, and identification and mapping of critical habitat is not expected to initiate any such threat. Therefore, in the absence of finding that the designation of critical habitat would increase threats to a species, if there are any benefits to a critical habitat designation, a finding that designation is prudent is warranted. Here, the potential benefits of designation include: (1) Triggering consultation under section 7 of the Act, in new areas for actions in which there may be a Federal nexus where it would not otherwise occur because, for example, it is unoccupied; (2) focusing conservation activities on the most essential features and areas; (3) providing educational benefits to State or county governments or private entities; and (4) preventing people from causing inadvertent harm to the species.

Because we have determined that the designation of critical habitat will not likely increase the degree of threat to the species and may provide some measure of benefit, we determine that designation of critical habitat is prudent for the black pinesnake.

Our regulations (50 CFR 424.12(a)(2)) further state that critical habitat is not determinable when one or both of the following situations exists: (1) Information sufficient to perform required analysis of the impacts of the designation is lacking; or (2) the biological needs of the species are not sufficiently well known to permit identification of an area as critical habitat.

Our regulations at 50 CFR 424.19 require the Service to “make available for public comment the draft economic analysis of the designation” at the time the proposed critical habitat rule publishes in the Federal Register. At this point, a careful assessment of the economic impacts that may occur due to a critical habitat designation is still ongoing, and we are still in the process of acquiring the information needed to perform this assessment. Accordingly, we find designation of critical habitat to be not determinable at this time.

Required Determinations

Clarity of the Rule

We are required by Executive Orders 12866 and 12988 and by the Presidential Memorandum of June 1, 1998, to write all rules in plain language. This means that each rule we publish must:

- (1) Be logically organized;
- (2) Use the active voice to address readers directly;
- (3) Use clear language rather than jargon;

- (4) Be divided into short sections and sentences; and
- (5) Use lists and tables wherever possible.

If you feel that we have not met these requirements, send us comments by one of the methods listed in the **ADDRESSES** section. To better help us revise the rule, your comments should be as specific as possible. For example, you should tell us the numbers of the sections or paragraphs that are unclearly written, which sections or sentences are too long, the sections where you feel lists or tables would be useful, etc.

National Environmental Policy Act (NEPA; 42 U.S.C. 4321 et seq.)

We have determined that environmental assessments and environmental impact statements, as defined under the authority of NEPA, need not be prepared in connection with listing a species as an endangered or threatened species under the Endangered Species Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244).

References Cited

A complete list of references cited in this rulemaking is available on the Internet at <http://www.regulations.gov> and upon request from the Mississippi Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Authors

The primary authors of this proposed rule are the staff members of the Mississippi Ecological Services Field Office.

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

Proposed Regulation Promulgation

Accordingly, we propose to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

PART 17—[AMENDED]

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 1531–1544; 4201–4245, unless otherwise noted.

2. Amend § 17.11(h) by adding an entry for “Pinesnake, black” to the List of Endangered and Threatened Wildlife in alphabetical order under REPTILES to read as set forth below:

§ 17.11 Endangered and threatened wildlife.

* * * * *

(h) * * *

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						

* * * * *

REPTILES

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Pinesnake, black	<i>Pituophis melanoleucus lodingi</i>	U.S.A. (AL, LA, MS)	Entire	T		NA	17.42(h)
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3. Amend § 17.42 by adding paragraph (h) to read as follows:

§17.42 Special rules—reptiles.

* * * * *

(h) Black pinesnake (*Pituophis melanoleucus lodingi*).

(1) *Prohibitions.* Except as noted in paragraph (h)(2) of this section, all prohibitions and provisions of §§17.31 and 17.32 apply to the black pinesnake.

(2) *Exemptions from prohibitions.* (i) Incidental take of the black pinesnake will not be considered a violation of section 9 of the Act if the take results from any of the following when conducted within habitats currently or historically occupied by the black pinesnake:

(A) Prescribed burning in the course of habitat management and restoration to benefit black pinesnakes or other native species of the longleaf pine ecosystem.

(B) Noxious weed control in the course of habitat management and restoration to benefit black pinesnakes or other sensitive species of the longleaf pine ecosystem, provided that the noxious weed control is conducted in a manner consistent with Federal law, including Environmental Protection Agency label restrictions; applicable State laws; and herbicide application guidelines as prescribed by herbicide manufacturers.

(C) Restoration along riparian areas and stream buffers.

(D) Intermediate silvicultural treatments (such as planting of longleaf seedlings on existing agricultural or silvicultural sites where mature longleaf stands do not currently exist) performed under a management plan or prescription that is designed to work towards the following target conditions:

- (1) Mature, longleaf-dominated forest with ≤ 70 percent canopy coverage;
- (2) Hardwood mid-story reductions resulting in < 10 percent mid-story coverage;
- (3) Abundant, diverse, native groundcover covering at least 40 percent of the ground.

(ii) Forestry practices (i.e., selective thinnings or small group selection cuts) conducted for the activities listed in paragraph (h)(2)(i) of this section must be conducted in a manner to maintain connectivity of suitable black pinesnake habitats, allowing dispersal and migration between larger forest stands; to minimize ground and subsurface disturbance by conducting harvests during drier periods, by using low-pressure tires, or both; and to leave stumps, dead standing snags, and woody debris.

* * * * *

Dated: _____ **September 23, 2014** _____

David Cottingham _____

Acting Director, U.S. Fish and Wildlife Service

**~~[Endangered and Threatened Wildlife and Plants; Threatened Status for the Black
Pinesnake]~~**

Billing Code 4310-55-P

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